

---

**DRAGONS**  
**User Guide**

**Issue 1.02**

**6 November 1998**

---

---

**Technolog Ltd**  
**Ravenstor Road**  
**Wirksworth**  
**Derbyshire**  
**DE4 4FY**

**Tel: 01629 823611**  
**Fax: 01629 82428357**

---

**E-2240**



© Copyright Technolog 1997

All rights reserved. This manual and the programs referred to herein are copyright works of Technolog Ltd, England. Reproduction in whole or in part, including utilization in machines capable of reproduction or retrieval without the express written permission of Technolog Ltd is prohibited.

Psion and the Psion logo are registered trademarks and Psion Workabout, Series 3a, Series 3, 3Link, Psion Solid State Disk, Psion SSD are trademarks of Psion PLC.

Technolog Ltd acknowledges the registered trademarks of all other companies referred to in this document.

E-2243

203

60

# Contents

Welcome .....	1
About this manual .....	1
Notation .....	1
The Workabout Screen .....	2
On-Screen Help .....	2
Getting started .....	3
DRAGONS Concepts .....	3
Operating Modes .....	3
Hardware .....	4
Installing The Software .....	4
DRAGONS .....	4
Setup Defaults .....	5
Status .....	9
Logger Status .....	9
Interrogate A Logger .....	9
Channel .....	10
Notepad .....	10
Taking A Reading .....	12
Input .....	12
Setup .....	13
Commissioning A logger .....	13
Set Clock .....	13
Set the Logger Timebase .....	14
Set a Channel Rate .....	14
Set Channel Scaling .....	15
Defining the Logger Global Settings .....	16
Define logger ID .....	16
Define Dial-Out Numbers .....	17
Start/Stop .....	17
Configure a Logger .....	18
Data Retrieval .....	21
Down loading a Logger .....	21
Transferring DAT Files to PMAC .....	22
Transferring NWL Files to PMAC .....	23
Transfer All NWL Files .....	23
Transfer One NWL File .....	24
Graphics .....	27
Viewing a Graph .....	27
Summary of Viewing Keys .....	28
Sumtnarising data .....	28
View a table of values .....	29
Changing Graph Defaults .....	30
Error Messages .....	31
Connection Timeout .....	31
Could Not Wake Logger .....	31
Communications Errors .....	31
Glossary .....	33
Types of logger .....	35



## Welcome

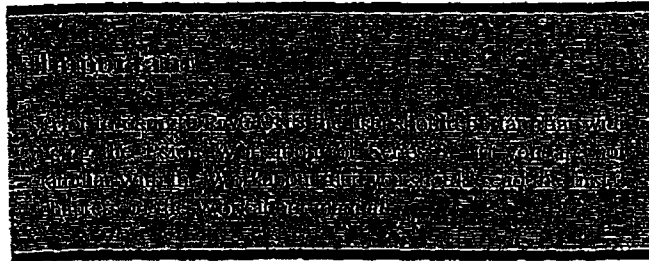
---



Welcome to DRAGONS, Technolog's Data Retrieval And Graphics ON Site software for use on Psion hand held computers.

A common rule when acquiring new software is to unpack, install and start running immediately. Manuals are usually left in the bottom of the box until a problem is unearthed for which a 'trial-and-error' solution cannot be found; by the time you come to read this you are probably having difficulties. To help solve your puzzle, the manual is divided into chapters covering different aspects of DRAGONS operation and at the start of each chapter you will find a *summary* of the topics covered in that chapter.

The manual is structured in the same sequence as the functions would be needed, i.e. Installation, checking a logger status, changing the logger settings, retrieving data and viewing data.



## About this manual ...

This manual is intended to guide users of DRAGONS software and covers all aspects from installation to editing site details including downloading of data. Chapter 1 gives an overview of the different parts of the DRAGONS software and explains how to install it onto the Workabout ready for use. Chapter 2 explains how to use DRAGONS to examine the state of a logger and chapter 3 describes how to modify the settings. Chapters 4 and 5 explain how to retrieve data (and download to a PC) and view graphs on the Workabout.

It is assumed that DRAGONS is being used on a Psion Workabout, although the software is also compatible with Psion Series 3c and 3a. For differences between the units please refer to the Psion manual.

## Notation

Throughout the manual the following notation will apply:

<u>Notation</u>	<u>Indication</u>
CAPS	menu items and program titles, eg. FILE is the first menu item of the SYSTEM screen.
BOLD	key presses, eg Y means press the 'Y' key.
Enter	The Workabout yellow, 'Enter' key
Menu	The Workabout grey, 'Menu' key.
<u>U</u>	The Workabout grey, 'U' (Psion) key.
Ctrl	The Workabout grey, 'ctrl' key.

Tab	The Workabout grey, 'Tab' key.
Del	The Workabout grey, '←Del' key.
On/Esc	The Workabout yellow, 'On/Esc' key.
▶◀▲▼	Right, left, Up and down (all yellow) arrow keys respectively
<u>I</u>	Press and hold the Workabout 'U' key then press the 'I' key.

## The Workabout Screen

The Workabout screen may appear slightly different to the illustrations shown in this manual depending on the zoom level and whether the STATUS window is in use. To obtain a STATUS window, press Ctrl+Menu, this will toggle between no window, large window and small window.

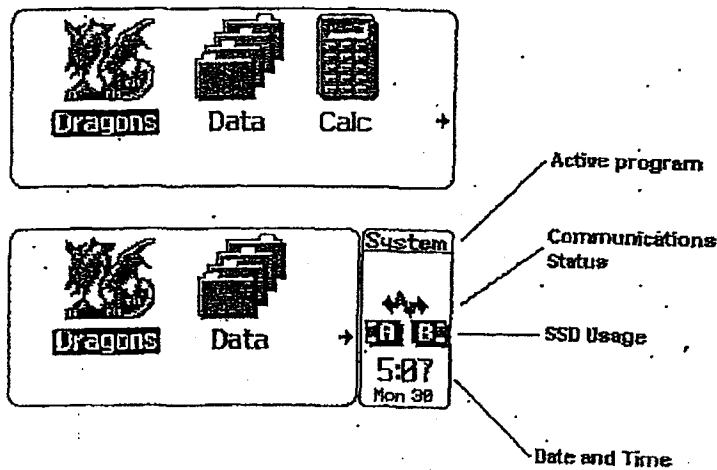


Figure 2 - Workabout Display without and with the STATUS window in use.

## On-Screen Help

The Workabout has an on-line help facility that is designed to assist the user by giving information about the function they are presently using. To access the HELP INDEX simply press Ctrl + On/Esc, to obtain specific information on the option you are presently editing press Shift + On/Esc

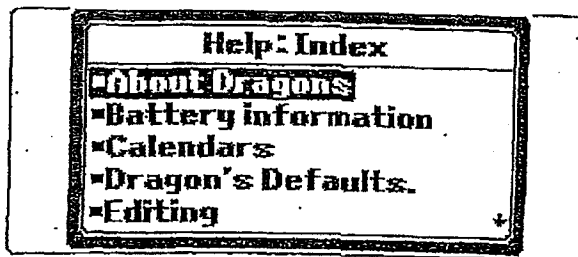


Figure 3 - DRAGONS main HELP INDEX



## CHAPTER 1

### Getting started

This chapter covers the following topics

- ✓ Understanding the DRAGONS components
- ✓ What Hardware you need to run DRAGONS
- ✓ Installing DRAGONS
- ✓ Commissioning DRAGONS

### DRAGONS Concepts

DRAGONS has been designed to allow users to commission loggers, retrieve data and view graphical data on site. The software is in a modular form to allow future expansion, the basic program set includes the DRAGONS program itself together with GRAPH and GRAPHNWL, generally users do not need to be familiar with the latter two modules as they are invoked automatically by DRAGONS.

DRAGONS allows the user to commission a logger (ie. view present state, define the logging rates, define the notepad, set the clock and start/stop logging) in addition to retrieving data for graphing and transfer to a PC. DRAGONS supports logger communicating with either GPS (eg. Newlog 3 or Metrolog) or E5565 (eg. Newlog 4) protocols, however this is normally transparent to the user as dragons automatically adapts to the type of logger connected.

### Operating Modes

DRAGONS has three main operating modes: STARTUP, INTERROGATE and GRAPH/Values. STARTUP is the default mode that DRAGONS enters when it is not communicating with a logger or displaying data.

```

Dragons (ver 1.08)
TComm (Ver 1.07)
(c) Technolog Ltd 1996-98

Connect a Logger and press
^I or Enter to Interrogate
^R to Read data

Or press Menu for menus
Shift+On/Esc for further help
  
```

Figure 4 - The DRAGONS STARTUP screen

The STARTUP window displays the DRAGONS version numbers that you are presently using, note there are two version numbers (the DRAGONS version and the TCOMM Version, which are 1.08 and 1.07 respectively in the example given in fig. 4) that will be required when requesting technical support. From STARTUP it is possible to move to INTERROGATE or GRAPH mode.

INTERROGATE mode is used when a logger is connected, to enter this mode select INTERROGATE from the LOGGER menu in the STARTUP window, or simply press U+I (or Enter) while in the STARTUP window. While in INTERROGATE mode DRAGONS keeps the logger awake so it is possible to view and edit the logger

settings, start and stop the logger, and retrieve data. DRAGONS will stop interrogating a logger and issue a CONNECTION TIMEOUT warning after 2 minutes unless a key is pressed or data is being down loaded. Before a timeout occurs, DRAGONS will beep with increasing frequency to warn the user.

The GRAPH mode may be entered by selecting GRAPH from the FILE menu in the STARTUP window or simply pressing U+G. GRAPH mode allows the user to plot data on a graph and view overall statistics for the data.

---

## Hardware

To run DRAGONS software you will need the following:

- A Psion Workabout or equivalent, with TTL or RS232 port, 1 MByte of RAM is recommended.
- Battery pack for the Psion - a Psion Ni-Cad rechargeable is recommended.
- A copy of the DRAGONS software on a flash SSD.
- A Workabout to data logger cable.

### Optional items include

RAM SSD's for recovery of data from multiple loggers, sizes available include 512 kByte, 1 MByte and 2.MBYTE.

Psion Workabout docking station with expansion port for TTL and RS232 links, complete with serial link to a PC.

Note that Flash SSD's may be used to recover but this is not recommended as they may be slow and use additional battery power.

---

## Installing The Software

All software to be used on a Workabout must be installed as explained below. Note that if the Workabout is reset, or all the batteries removed (including backup battery), then the software will need to be reinstalled.

Before installing the software fit the DRAGONS SSD into the Workabout as described in Chapter 1 of the Workabout manual. It is recommended that the DRAGONS disk is fitted into slot B to make it easier to add/remove RAM SSD's at a later date.

## DRAGONS

The DRAGONS program itself is the main tool for configuring loggers and Down loading data. To install DRAGONS proceed as follows:

From the SYSTEM screen press MENU and select APPS, then select INSTALL. Alternatively simply press U + I or Enter.

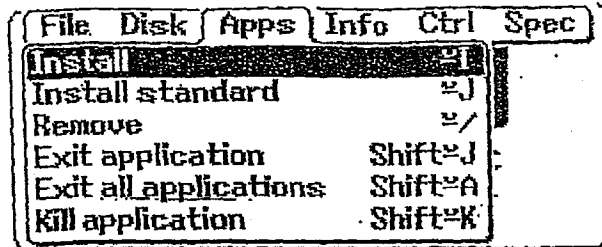


Figure 5 - APPS, INSTALL menu.

Use the ▲▼ keys to select POSITION, then ←→ to set where you wish DRAGONS to appear in the SYSTEM screen.

Use the ▲▼ keys to select DISK, then ←→ to change it to where you have installed the DRAGONS flash SSD.

Use the ▲▼ keys to select FILE: NAME, then ←→ to change it to show DRAGONS\_APP.

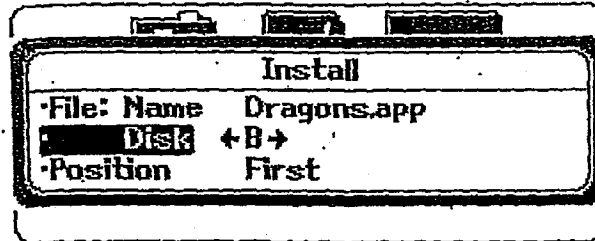


Figure 6 - Selecting DRAGONS for installation

Once the details are correct press Enter and the DRAGONS application will appear in the SYSTEM screen.

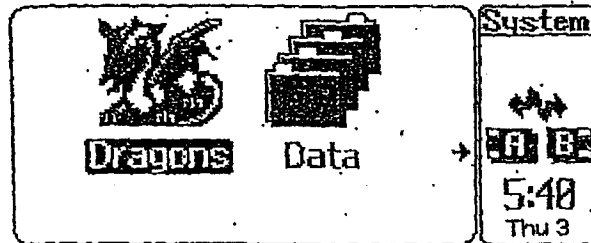


Figure 7 - DRAGONS on the SYSTEM screen

## Setup Defaults

Prior to using DRAGONS the operating parameters (which communications ports to use, where data is stored, etc) must be defined, this is done as follows:

Run the dragons program by highlighting it in the SYSTEM screen and pressing Enter. The STARTUP screen will appear as shown below.

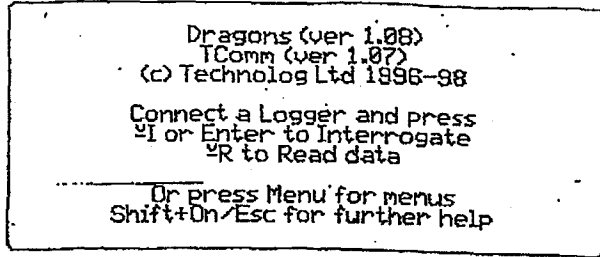


Figure 8 - The DRAGONS STARTUP screen

Press Menu, select SPECIAL then DEFAULTS, or simply press U + F

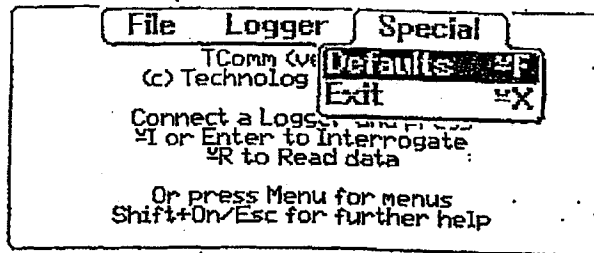


Figure 9 - Selecting DEFAULTS

The DATA DISK option defines where the Workabout stores data that has been down loaded from a logger, change it to indicate the location of your RAM SSD (refer to chapter 1 of the Workabout manual if you are unclear on where your SSD's are located). If you do not have a RAM SSD then this option should be left as INTERNAL. The DATA DISK drive should not be set to the same disk that holds the DRAGONS software.

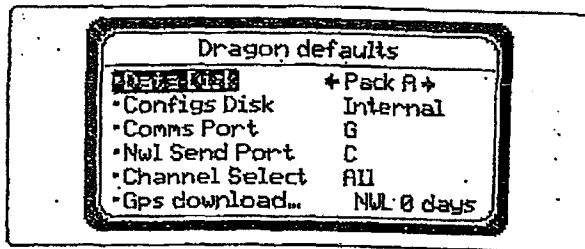


Figure 10 - The DEFAULTS screen

The CONFIGS DISK is the location where the logger configuration files are stored. If the config files have been supplied by Technolog then this disk will be the same as the DRAGONS disk used during installation, normally disk B.

The COMMS PORT is used to indicate which connector is used for communications with loggers, if you are using the RS232 port then this should be set to option A, if you are using the TTL port this option should be set to G. The port names are indicated in white lettering on the top of the Workabout. Note that DRAGONS will not communicate with a logger using the barcode reader socket.

The NWL SEND PORT is used to indicate which RS232 port is to be used for sending files to a PC running Technolog's GP2 software. Note that this option is not used if the PC is running PMAC. If you are using the RS232 port at the top of the Workabout then this option should be set to A, if you are using a Docking Station then set it to C.

CHANNEL SELECT allows a user to define which channels will be down loaded during a data retrieval operation. This may be set to ALL to down load all available channels; ASK to have DRAGONS prompt

the user about whether to down load each channel; or a specific channel number, which will down load one individual channel.

GPS DOWN LOAD allow the user to define the down load operation for GPS protocol loggers, this is only applicable to these loggers and has no effect for E5565 protocol loggers. Press Tab to select this option.

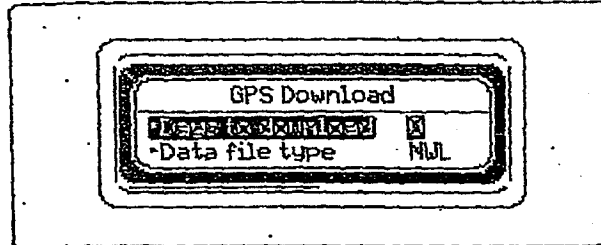


Figure 11 - Defining GPS download options

The value appearing by the DAYS TO DOWN LOAD indicates how many days, starting with the most recent, will be retrieved when a partial down load is executed. If the value is left as zero then all the available data will be down loaded.

DATA FILE TYPE defines which format to be used when data is down loaded from GPS protocol loggers. This should be set to NWL, unless advised otherwise by Technolog Support personnel.

Press Enter when all the options are set correctly, pressing On/Esc will cancel the setup operation.



## CHAPTER 2

### Status

This chapter covers the following topics .

- ✓ Looking at the logger status
- ✓ Looking at the channel settings
- ✓ Viewing a logger notepad
- ✓ Examining the logger inputs

### Logger Status

The following section explains how to view the status of a logger.

Note that the information that will appear on your Workabout will be dependent on the logger you are using and how it is configured, the illustrations are for explanation purposes only.

#### Interrogate A Logger

When a logger is interrogated the user is provided with an overview of the state of the logger. To view the general setup of a logger proceed as follows:

Connect the Psion to the logger, if DRAGONS is not already running select the DRAGONS icon in the SYSTEM screen and press Enter.

With the DRAGONS STARTUP screen selected press U+I, or Enter or select INTERROGATE from the LOGGER menu.

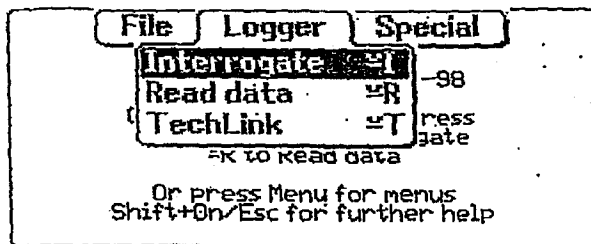


Figure 12 - Selecting the INTERROGATE option

A message saying "WAKING LOGGER" will flash on the bottom left hand corner of the screen and there will be a short delay while DRAGONS reads the logger settings. Note that if the STATUS window is open you will be able to see the communications indicator moving to show that communications are in progress.

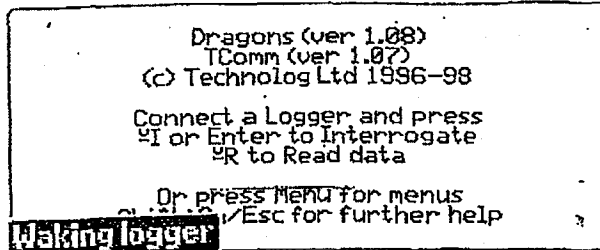


Figure 13 - Communicating with a logger

When the interrogation is complete the present logger status will be displayed. The details will vary with logger and application, however the diagrams below show typical examples of a logger status.

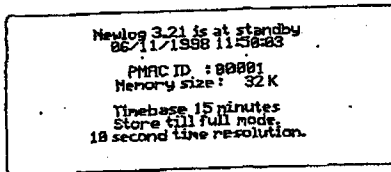


Figure 14 - Status of a Newlog 3

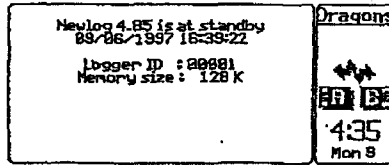


Figure 15 - Status of a Newlog 4

Once a logger state is displayed it is possible to examine other aspects of the logger.

## Channel

The CHANNEL menu option allows the user to view the present status of all the channels. To display the channel status proceed as follows:

Interrogate the logger to view the general state.

Press Menu then select STATUS, INPUT or simply press U+C. The result from the logger is dependent on the application and state of the logger, an example is shown below.

Measurand	Used / Left	Rate
Velocity	0, 7680	15 mins
Count 3	0, 7680	15 mins
Count 4	0, 7680	15 mins

Figure 16 - Channel status of a Newlog

## Notepad

The notepad is an area of logger memory which is used as required for each application. For E5565 protocol loggers this area is normally only used for operator information, for GPS protocol loggers the notepad is used to store scaling and zero offset information.

To view a logger notepad ...

Interrogate the logger to view the general state.



Press Menu then select STATUS, NOTEPAD or simply press U+N. The result from the logger is dependent on the application and state of the logger, some examples are shown below.

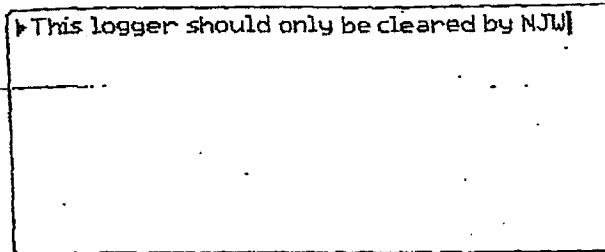


Figure 17 - Example notepad from a Newlog 4

Note that if all the notepad does not appear on the screen the ▲▼ keys to step through up down, U+▲▼ for page up/down and U+▶◀ for the end/start of the notepad. Note a small arrow appears in the top/bottom right of the window to indicate if additional information is available.

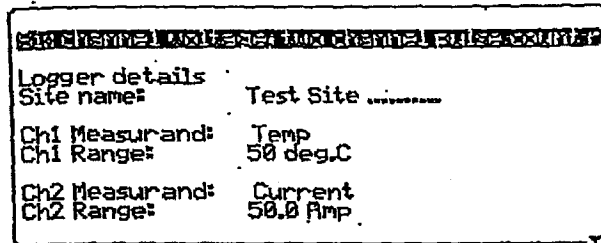


Figure 18 - Example of first page of a Newlog notepad

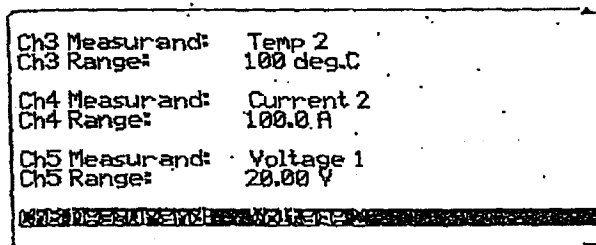


Figure 19 - Example of second page of a Newlog notepad

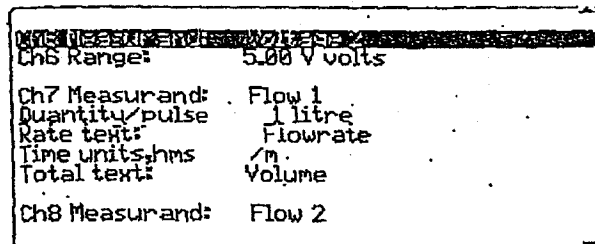


Figure 20 - Example of third page of a Newlog notepad

## Taking A Reading

Most loggers will give an instantaneous reading when at standby and last recorded reading when active. Some loggers will provide instantaneous readings when both active and standby.

## Input

The INPUT function allows the user to view what the logger is presently reading on its inputs.

To display a reading proceed as follows:

Interrogate the logger to view the general state.

Press Menu then select STATUS, INPUT or simply press U+I. The result from the logger is dependent on the application and state of the logger, some examples are shown below.

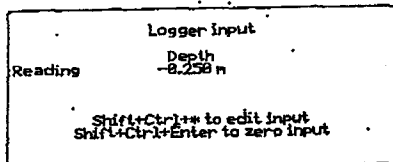


Figure 21 - Analog input

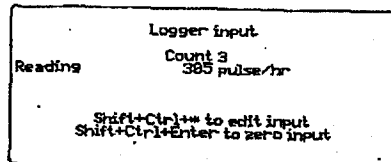


Figure 22 - Event input on a Newlog 3

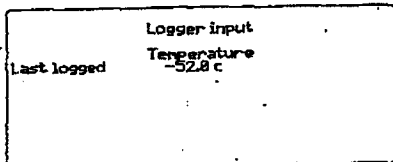


Figure 23 - Last log, analog, on Newlog 3

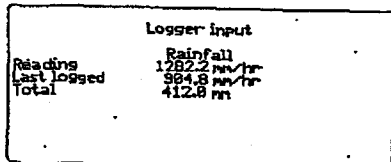


Figure 24 - Last log, event, on Newlog 3

To switch to the next channel press **▶**, to switch to the previous channel press **◀**.

## CHAPTER 3

### Setup

This chapter covers the following topics

- ✓ Set the logger clock
- ✓ Define the logging rate
- ✓ Setup channel parameters
- ✓ Setup logger ID
- ✓ Dial-out telephone numbers
- ✓ Start and stop the logger

### Commissioning A logger.

Prior to starting a logger it is usual to check that the logger time is correct then define the operating parameters, this chapter explains these operations.

#### Set Clock

The SET CLOCK function displays the logger and Workabout clocks and allows the user to set the logger clock to match the Workabout. To set the clock proceed as follows:

Interrogate the logger to view the general state.

Press Menu then select LOGGER, SET CLOCK or simply press U+L. Note the displayed dates and times are static, i.e. they are a single instantaneous reading used to highlight the difference between the two clocks.

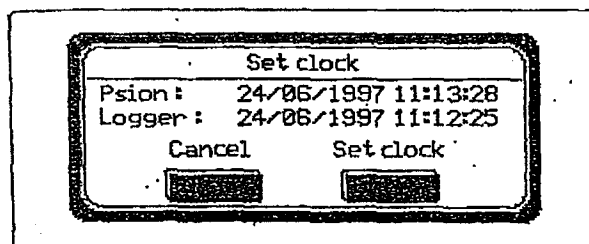


Figure 25 - Setting the logger clock

Press Enter to set the logger clock to match the Workabout or On/Esc to cancel the operation. When the Enter key is pressed the logger a new time is taken from the Workabout and entered into the logger to allow for the static display.

#### Set the Logger Timebase

Timebase is only used with GPS protocol loggers and is not applicable to E5565 protocol loggers.

The timebase is the fundamental heartbeat of a logger, each timebase period the logger awakes and executes necessary operations before going back to sleep. The advantage of a fast timebase is that allows greater flexibility in selection of logging rates, the disadvantage is that a fast timebase reduces the logger battery life. As a general rule the timebase should be set to match the logging rate of the slowest channel. To set the timebase proceed as follows:

Interrogate the logger to view the general state.

Press Menu then select **LOGGER, GLOBAL SETTINGS** or simply press **U+G**.

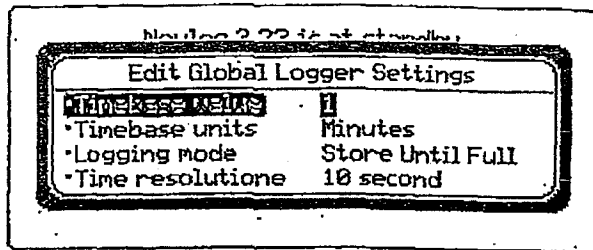


Figure 26 - Setting the logger timebase

Use the **▲▼** keys to select the **TIMEBASE VALUE** then use the number keys to enter a value, note that only certain values may be entered and DRAGONS will adjust the entered value to the nearest available. For seconds and minutes the applicable options are 1, 2, 3, 4, 5, 6, 10, 12, 15, 20 and 30; for hours they are 1, 2, 3, 4, 6, 8 and 12.

Use the **▲▼** keys to select the **TIMEBASE UNITS** then use the **▶◀** keys to select between hours, minutes and seconds.

Press **Enter** to write the new values to the logger, or **On/Esc** to cancel.

### Set a Channel Rate

The channel rate is a multiple of the time base, hence if you have a timebase of 5 minutes channel rates of 5, 10, 15, ... minutes will be available. To define the logging rate for a channel proceed as follows:

Interrogate the logger to view the general state.

Press Menu then select **STATUS, CHANNEL** or simply press **U+C**.

Measurand	Used / Left	Rate
Velocity	0, 7680	15 mins
Count 3	0, 7680	15 mins
Count 4	0, 7680	15 mins

Figure 27 - Selecting the channel to set the rate

Select the channel to be modified and press **Enter**. Note the available options will depend on the type of logger and the configuration of the logger, two typical examples are given below.

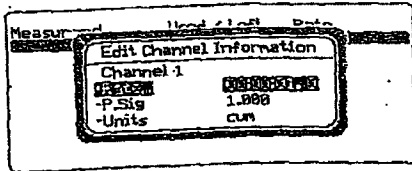


Figure 28 - Example of E5565 protocol logger

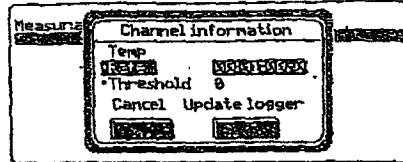


Figure 29 - Example of GPS protocol logger

Select RATE then press Tab to allow the actual value to be defined

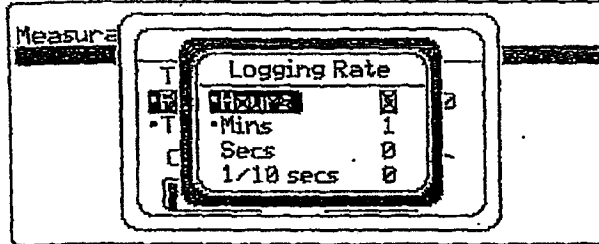


Figure 30 - Selecting the channel to set the rate

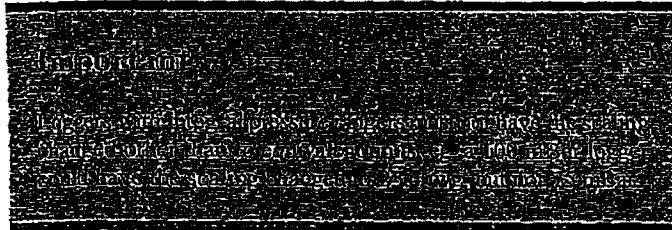
Enter the required rate using the ▲▼ to select the units and the number keys to define the value.

Press Enter to return to the previous screen, then Enter again to complete the edit operation.

### Set Channel Scaling

For many loggers it is possible to change the scaling and/or units recorded. The method used depends on the protocol used for a particular application although in all cases it is necessary to first interrogate the logger.

Note: It is not recommended that a logger scaling is edited whilst logging as the scaling of logged data will be altered.



To modify the scaling for a E5565 protocol logger:

Interrogate the logger to view the general state.

Press Menu then select STATUS, CHANNEL or simply press U+C.

Select the channel to be modified and press Enter.

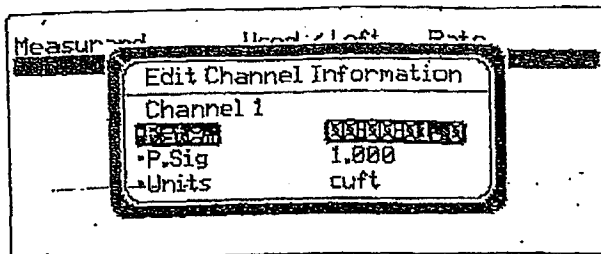


Figure 31 - Edit scaling on E5565 protocol logger

Note the available options will depend on the type of logger and the configuration of the logger.

Use the  $\uparrow\downarrow$  keys to select the P.SIG (Pulse Significance) or RANGE then enter a value using the numeric keys.

Press Enter to complete the edit operation.

To modify the scaling on a GPS protocol logger:

Interrogate the logger to view the general state.

Press Menu then select STATUS, NOTEPAD or simply press  $U+N$ .

Select the measurand (range or pulse significance) for the channel to be modified and press Enter. Then modify the alpha-numeric keys to modify both the range and units.

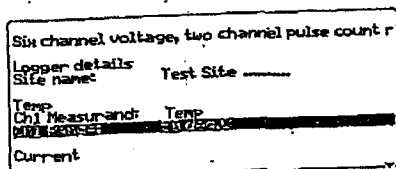


Figure 32 - Select scaling

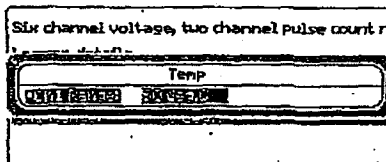


Figure 33 - Modifying the scaling

## Defining the Logger Global Settings

Global settings are those that affect all aspects of a loggers operation and are not channel specific.

### Define logger ID

This section is applicable to E5565 protocol loggers only.

The logger ID should be unique for a particular site and is the key to successfully working with PMAC. To define the logger id proceed as follows:

Interrogate the logger to obtain the present state.

Select GLOBAL SETTINGS from the LOGGER menu, or press  $U+G$  as a shortcut.

Enter the desired ID using the numeric keys then press Enter

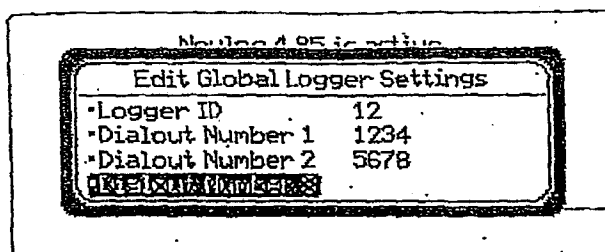


Figure 34 - Defining the logger ID

## Define Dial-Out Numbers

Dial-out numbers are only available with loggers that have an alarm dial-out capability.

Dial-out numbers are the telephone numbers that are used when a logger generates an alarm and is set to use a modem to dial a host computer. Note the second and third numbers are only used if their predecessor(s) fail.

To set the dial-out numbers:

Interrogate the logger to obtain the present state.

Select GLOBAL SETTINGS from the LOGGER menu, or press U+G as a shortcut.

Use the ▲▼ keys to select the number to be changed.

Enter the desired numbers using the numeric keys then press Enter

## Start/Stop

When starting or stopping a logger, DRAGONS will automatically indicate the present state and prompt the user to press Enter to change the state or On/Esc to cancel the change. To start/stop a logger ...

Interrogate the logger to view the general state.

Press Menu then select LOGGER, START/STOP or simply press U+Z.

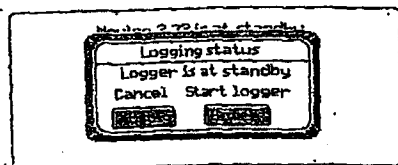


Figure 35 - Starting a logger

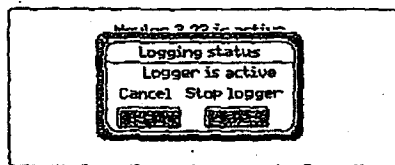
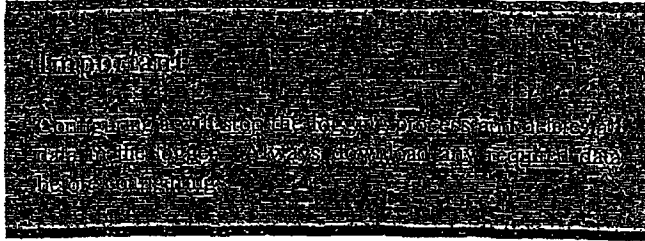


Figure 36 - Stopping a logger

Press Enter to confirm the operation or On/Esc to cancel.

## Configure a Logger

The configuration menu option allows the operator to use a config file to make global changes to a logger. Config files are supplied separately from DRAGONS.



To reconfigure a logger:

Interrogate the logger to view the general state.

Press Menu then select **LOGGER, CONFIGURE** or simply press **U+O**.

Select the file required and press **Enter** to continue.

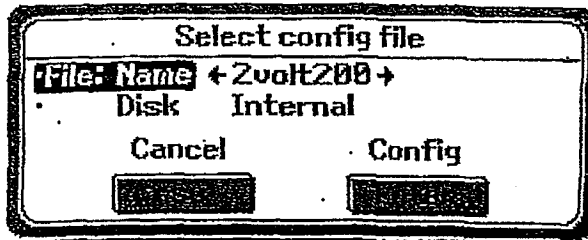


Figure 37 - Selecting a config file

If the logger is currently active the user will be prompted to stop logging before the configure operation can continue.

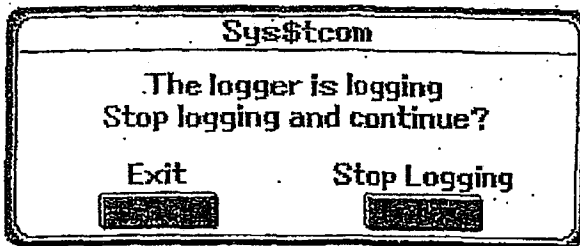


Figure 38 - Stop logging before configuring

DRAGONS will flash a "Configuring" message while the process is active before displaying the status after configuration.

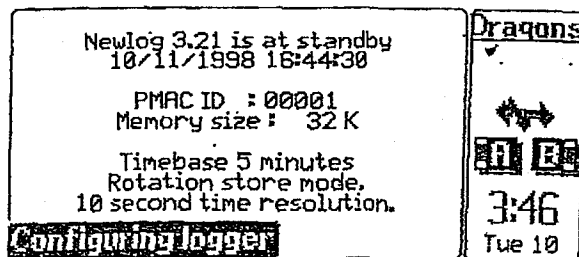


Figure 39 - Flashing "Configuring" message





## CHAPTER 4

---

### Data Retrieval

This chapter covers the following topics

- ✓ Down loading data from loggers
  - ✓ Transferring DAT files to PMAC
  - ✓ Transferring NWL files to PMAC or GPS
- 

### Down loading a Logger

Down loading is the process of extracting data from the loggers onto the Workabout. To down load a logger proceed as follows

Interrogate the logger to view the general state.

Press Menu then select DATA, READ or simply press U+R.

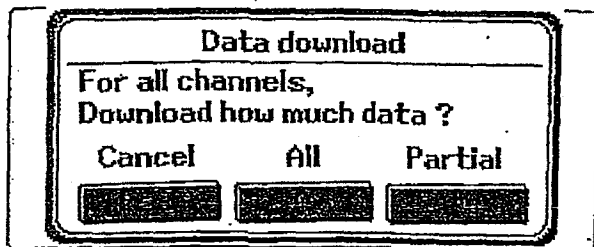


Figure 40 - Downloading a GPS protocol logger

Note that for some loggers the DATA DOWN LOAD window may not appear, these loggers will automatically have the most recent data down loaded.

Press A to down load all the data, press Enter to down load only as much data as defined in the SPECIAL, DEFAULTS window.

A window will appear indicating the state of the down load process for each channel.

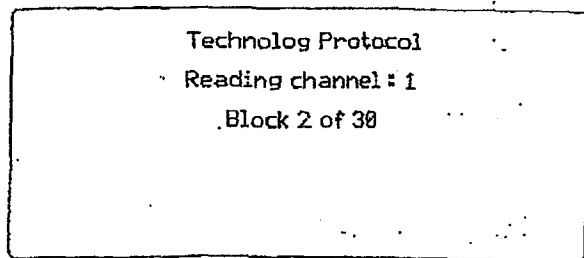


Figure 41 - Data being downloaded

DRAGONS will indicate when the down load operation is complete.

Measurand	Data File
Depth	DATA1101.NWL
Velocity	DATA1102.NWL
Count 3	DATA1103.NWL
Count 4	DATA1104.NWL

Figure 42 - Downloading complete

## Transferring DAT Files to PMAC

DAT files are PMAC compatible data files generated when Downloading E5565 protocol loggers. These files are easily transferred as follows:

First change to the SYSTEM window, this may be done by pressing U+Tab or by exiting DRAGONS. To exit DRAGONS press Menu then select SPECIAL, EXIT, or simply press U+X.

From the SYSTEM window press Menu then select SPEC, REMOTE LINK.(or simply press U+L).

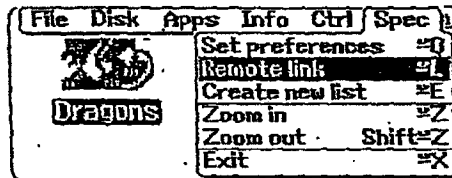


Figure 43 - Selecting remote link

Change the remote link setting to ON. Set the BAUD RATE to match what has been defined in PMAC (to find what PMAC is set for select EDIT, WORKABOUT SETTINGS from the LOCAL COMMS window).

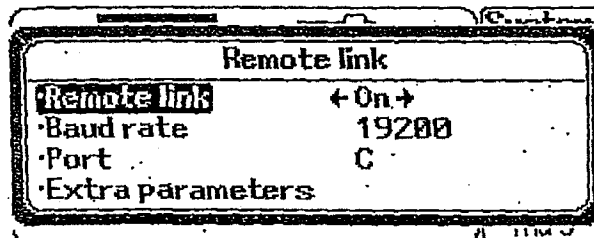


Figure 44 - Changing the remote link settings

Select the correct PORT: If you are using the RS232 port at the top of the Workabout then this option should be set to A, if you are using a Docking Station then set it to C (Port C will only be selectable if the Workabout is in the Docking Station). Press Enter when the settings are correct.

The Workabout is now ready for use. Note that the setup option only needs to be done once and will not need repeating so long as neither the user nor any other software changes the link settings.

To download data simply connect the Workabout to the PC using the appropriate port and from PMAC Plus select LOCAL COMMS, MODE, INTERROGATE WORKABOUT then proceed with the download in the usual way.

## Transferring NWL Files to PMAC

Files may be selected for transfer either individually or all together.

### Transfer All NWL Files

Data retrieved from GPS protocol loggers is stored in an NWL format, these files may be transferred to Technolog's DOS based GPS and GPS-2 software or into PMAC using the PSION-TO-PMAC program.

To transfer all NWL files proceed as follows:

First change to the SYSTEM window, this may be done by pressing U+Tab or by exiting DRAGONS. To exit DRAGONS press Menu then select SPECIAL, EXIT, or simply press U+X.

From the SYSTEM window press Menu then select SPEC, REMOTE LINK (or simply press U+L).

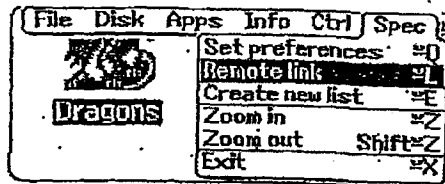


Figure 45 - Selecting remote link

Change the remote link setting to OFF. Note this operation will normally only need to be done once, if the REMOTE LINK is not changed by the user or any other software it will remain off.

If the DEFAULTS, NWL SEND PORT have not previously been configured (as described in chapter 1) then they should be configured before attempting to transfer data.

From the DRAGONS STARTUP screen select FILE then select either SEND ALL, or simply press U+A.

In PMAC go to LOCAL Comms then select the PSION NWL tab and click on RECEIVE DATA.

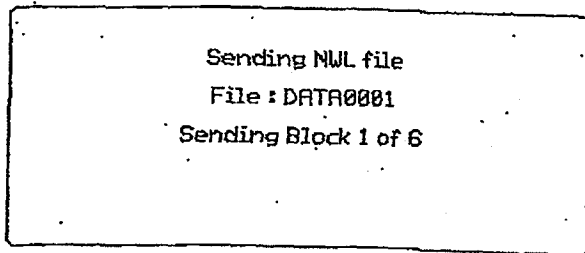


Figure 46 - Transferring NWL data

DRAGONS will indicate when the transfer is complete:

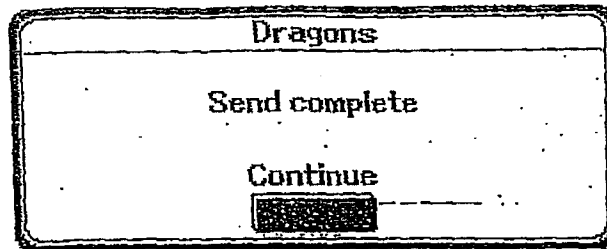


Figure 47 - Complete transfer of data

### Transfer One NWL File

Transfer of a single NWL file is a similar process to transferring all files, except the user can specify which file they wish to transfer.

First change to the SYSTEM window, this may be done by pressing **U+Tab** or by exiting DRAGONS. To exit DRAGONS press Menu then select SPECIAL, EXIT, or simply press **U+X**.

From the SYSTEM window press Menu then select SPEC, REMOTE LINK (or simply press **U+L**).

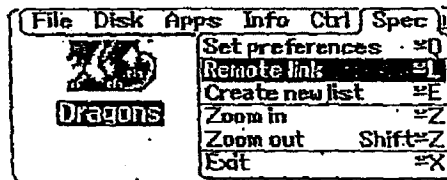


Figure 48 - Selecting remote link

Change the remote link setting to OFF. Note this operation will normally only need to be done once, if the REMOTE LINK is not changed by the user or any other software it will remain off.

If the DEFAULTS, NWL SEND PORT have not previously been configured (as described in chapter 1) then they should be configured before attempting to transfer data.

In PMA<sup>2</sup> go to LOCAL Comms then select the PSION NWL tab and click on RECEIVE DATA.

From the DRAGONS STARTUP screen select FILE then select either SEND ALL, or simply press **U+S**. Select the data file to be transferred and hit Enter.

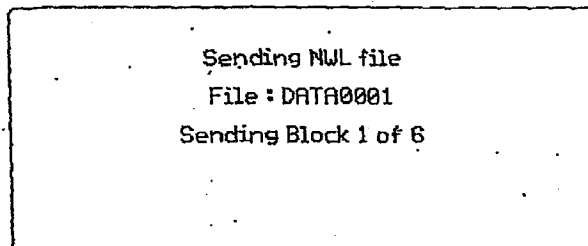


Figure 49 - Transferring NWL data

DRAGONS will indicate when the transfer is complete.

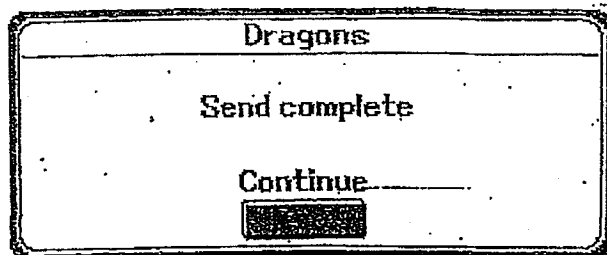


Figure 50 - Complete transfer of data



## CHAPTER 5

### Graphics

This chapter covers the following topics

- ✓ How to view a graph of data
- ✓ How to scroll a graph
- ✓ How to zoom in to and out of a graph
- ✓ How to obtain a file summary

### Viewing a Graph

The graph feature is a quick and convenient way of viewing data, however some data types (ie. event, state and threshold) cannot be viewed as a graph, such data will automatically appear as a table of values.

To obtain a graph of the data you have down loaded proceed as follows:

From the DRAGONS STARTUP window, press Menu then select FILE, GRAPH A FILE, or simply press U+G. If you are already viewing a graph and would like to switch to another then select FILE, OPEN or press U+O.

Use the ▲/▼ keys to identify the file you wish to view (an alternate disk may be selected if required) then press Enter:

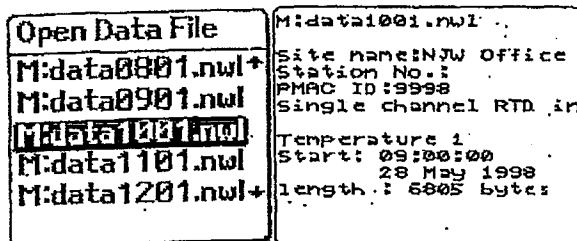


Figure 51 - Selecting a file to graph

The graph will then be displayed

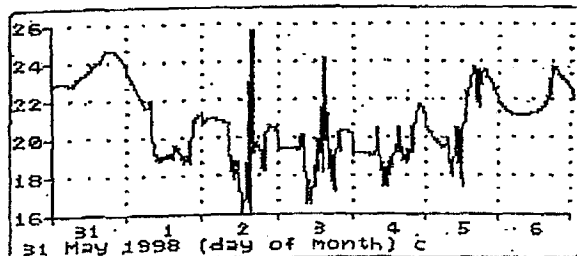


Figure 52 - Example graph

To display information about the displayed data select FILE INFO from the FILE menu, or press U+I.



```

M:DATA1001.nw1
Site name:NJW Office
Station No.:
PMAC ID:9998
Single channel RTD interface

Temperature 1
Start: 09:00:00
      28 May 1998
Length : 6805 bytes
    
```

Figure 53 - Displaying information

## Summary of Viewing Keys

The view may be altered by using the keys listed below, note that it is also possible to select rescaling operations from the menu.

- ▶◀▲▼ Scroll the graph right, left, up and down respectively.
- Shift + ▶◀▲▼ Scroll by a complete screen.
- Ctrl + ▶◀ Zoom in/out on X-axis.
- Ctrl + ▲▼ Zoom in/out on Y-axis.
- A Autoscale Y-axis
- H Set X-axis to display 1 hour of data.
- D Set X-axis to display 1 day (starting from midnight)
- W Set X-axis to display 1 week
- M Set X-axis to display 1 month (4 weeks) of data
- Y Set X-axis to display 1 year (12 months starting from January)

## Summarising data

DRAGONS will provide a statistical summary of data in the form a of maximum, minimum and mean values over a specified period. To obtain these values:

Obtain a graph of the required data.

From the menu select FILE, SUMMARY or simply press U+S.

Specify the start and date/time as required, default is for the entire data set.

Figure 54 - Selecting period to be summarised.

Press Enter once the period has been specified and the results will be displayed.

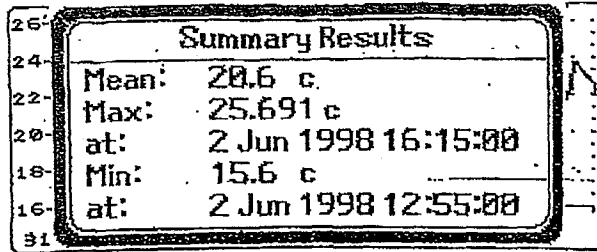


Figure 55 - Example of the results of a SUMMARY

### View a table of values

As an alternative method of viewing data the user may switch to viewing a table of readings in place of the graph. The table view may be set as the default option using the SPECIAL, OPTIONS menu facility in GRAPH. To view a table of values:

First obtain a view of the graph as explained above.

Select FILE, VALUES (U+I) from the menu or simply press TAB to toggle between graph and table views.

Date/Time	Reading
28 May 1998 09:00:00	18.6 c
28 May 1998 09:05:00	18.509 c
28 May 1998 09:10:00	18.091 c
28 May 1998 09:15:00	18.109 c
28 May 1998 09:20:00	18.182 c
28 May 1998 09:25:00	18.436 c
28 May 1998 09:30:00	18.236 c
28 May 1998 09:35:00	18.055 c
28 May 1998 09:40:00	17.709 c
28 May 1998 09:45:00	17.673 c
28 May 1998 09:50:00	17.764 c
28 May 1998 09:55:00	18.018 c

Figure 56 - Example of a table of values

Use ▲▼ to scroll through the data. Similarly use Ctrl + ▲▼ to move to the top/bottom of the data, ▲▼ to move a page at a time or Shift + ▲▼ to scroll 1/10th of total range.

Select GOTO, DATE/TIME, or press U+D, to move immediately to a known point in the data.

Date/Time	Reading
28 May 1998 09:00:00	18.6 c
28 May	
28 May	
28 May	
28 May	
28 May	
28 May	
28 May	
28 May	
28 May	
28 May	
28 May	
28 May	
28 May 1998 09:50:00	17.764 c
28 May 1998 09:55:00	18.018 c

**Goto Date/Time**

Date 28/05/1998

Time 09:00:00 am

Figure 57 - Using the GOTO, DATE/TIME function

### Changing Graph Defaults

To change the initial view displayed when selecting GRAPH, use the options menu:

Select SPECIAL, OPTIONS or press U+P.

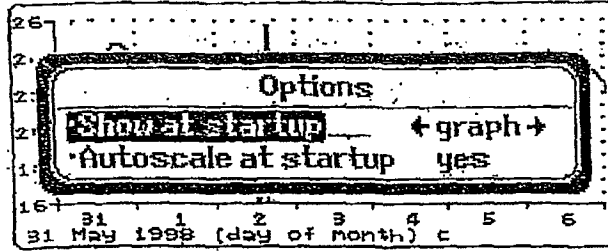


Figure 58 - Defining GRAPH options

At startup the default view may be set to show either a graph or the values.

When a graph is first requested it may be set to immediately autoscale for optimum viewing, this option could be disabled to reduce display time when viewing large files.

## CHAPTER 6

### Error Messages

Listed below are some of the error messages that may occur while using DRAGONS.

#### Connection Timeout

These occur when DRAGONS is left connected, but inactive, after a logger has been interrogated. When a logger is interrogated DRAGONS maintains contact with it for 2 minutes, if no keys are pressed and no data down loaded then DRAGONS will generate a timeout. This message may also occur in the event of communications problems with a logger.

When this message appears simply press **ESC** to acknowledge the message and return to DRAGONS STARTUP window then press **U+I** to interrogate the logger again.

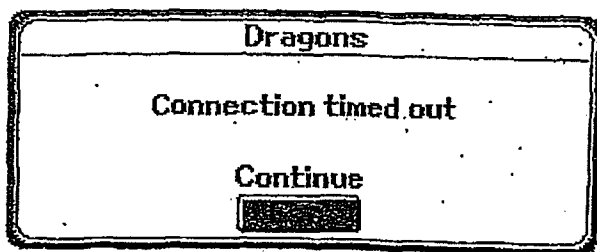


Figure 59 - Timeout error message

#### Could Not Wake Logger

When entering INTERROGATE mode DRAGONS attempts to initiate communications with a logger, ie. 'wake' a logger, if this initial contact fails then an error message is generated.

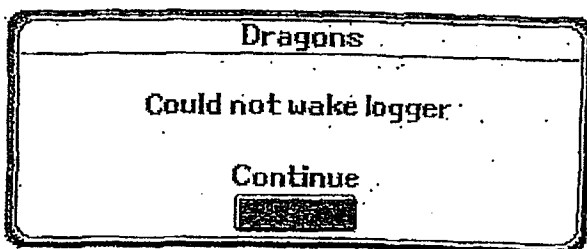


Figure 60 - Failing to wake a logger

#### Communications Errors

Communications errors occur when DRAGONS is unable to send or receive data from a logger. The message that appears will indicate the failed operation.

Press **Esc** to acknowledge the message and repeat the operation.

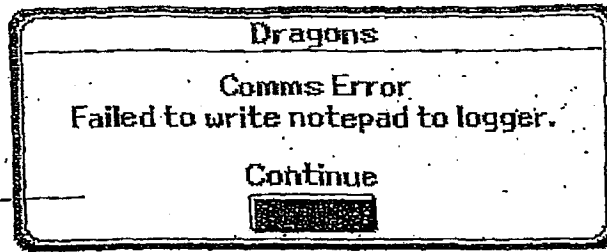


Figure 61 - Communications error while writing a notepad

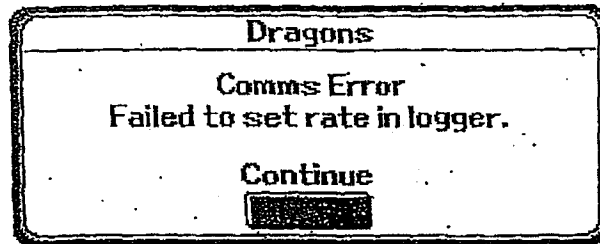


Figure 62 - Communications error setting the rate.

## CHAPTER 7

---

### Glossary

- Active** --A logger is described as active when it is actively recording data, ie. it has been started.
- Analogue input** For data loggers this is defined as any input source in an unconverted form, eg. a voltage signal which varies between 0 and 2.5V or an integral transducer. See Digital Input for more information.
- Count recording** Count recording is a form of event logging where all the events in the logging period are added together and the total is stored at the end of the interval.
- Digital Input** Any signal source originating from a non-continuous source, eg. switch closure or voltage pulses
- GP2** Technolog's General Purpose DOS software, version 2.
- GPS protocol** Communications system used by certain types of loggers: Newlog 3 family, Metrolog, Autowat, Utilog.
- E5565 protocol** Communications system used by certain types of loggers: Newlog 4 family, Newlog ADS.
- Event** For data logging applications an event is a brief switch closure or voltage pulse used to indicate some sort of action, eg. many meters generate a switch closure (an event) each time a predefined volume has been passed.
- Event Recording** A form of logging where the date and time of each event is stored.
- Logging Interval** See Rate.
- PMAC** Technolog's Windows software for data retrieval and analysis.
- Pulse Significance** When recording event or count data the pulse significance indicates the value of each event, eg. a meter may be configured such that each event is equivalent to 10 litres being passed.
- Range** The maximum range, in scaled engineering units, for a particular input.
- Rate** Also known as logging interval, this is the periodic time interval at which readings are taken. Note that count recorders continue to record events throughout the logging interval. Some loggers sample inputs at high speed (eg. 10 Hz) throughout the logging interval then store statistical data (typically maximum, minimum, mean and standard deviation) at the end of the period.
- SSD** Solid State Disc; data and program storage for Psion Workabout. SSD's may be 'flash' which does not require battery backup, or 'RAM' which requires a small button cell. See Psion manual for more information.
- Standby** A logger is described as being at standby when it is not actively recording data, ie. has not been started.



## Appendix A

### Types of logger

<u>Logger</u>	<u>Description</u>
Autowat	GPS logger with pressure control for use in the water industry.
Autogas	E5565 protocol logger with pressure control facilities for use in the gas industry.
Baby Newlog	A single, dual or triple channel logger that is a subset of the Newlog 3 family. Capable of recording digital input signals only, eg. event or count logging of meter pulses.
Babylog	See Baby Newlog.
Datamaster	A data retrieval unit for use with E5565 protocol loggers, not suitable for use with DRAGONS.
Ecolog	Variation on Metrolog P with integral valve control for pressure switching in the water industry. Uses GPS protocol.
Flowlog	A dedicated flow recording logger capable of logging high frequency input signals. Uses GPS protocol.
Metrolog 420 MET	Pressure and flow recorder for use with 4 to 20 mA pressure transmitters. Second channel for flow recording. Uses GPS protocol.
Metrolog 420 TA	Pressure and flow recorder for use with 4 to 20 mA pressure transmitters. Second channel for flow recording. Uses GPS protocol.
Metrolog Flow	Available with and without display.
Metrolog H	A pressure and flow logger with integral pressure transducer and magnetic pickup for use with Kent 3000-meters. Available with and without display. Uses GPS protocol.
Metrolog NA	High accuracy, high resolution pressure recorder for network analysis. Display option available. Uses GPS protocol.
Metrolog P	A pressure and flow logger with integral pressure transducer and switch closure input. Available with and without display. Uses GPS protocol.
Newlog 2	Specialist logger not suitable for use with DRAGONS.
Newlog 3	This is a family of general purpose loggers capable of recording up to 8 channels of state, event, count frequency or analogue data and used in a wide range of applications. Uses GPS protocol.
Newlog 4	This is family of Intrinsically Safe loggers for use in the gas industry and capable of recording up to 2 pressures, 2 flows, 2 temperatures and 8 state inputs. Available with and without display. Uses E5565 protocol.
Newlog 4 DCP	Dual channel logger for recording cathodic protection voltages. Uses E5565 protocol.



Newlog 4 DR	Intrinsically Safe, single pressure recorder for use in the gas industry.
Newlog 4 TFD	Temperature and flow logger for use in the gas industry. Uses E5565 protocol.
Newlog ADS	Intrinsically Safe logger for recording angles and 4 to 20 mA signals. Uses E5565 protocol.
Newlog CV	Dual pressure and flow logger for use on water pressure regulation valves. Uses GPS protocol.
Newlog DTX	Logger for recording up to four 4 to 20 mA signals. Uses GPS protocol.
Newlog L	Logger for recording low voltages, variant on Newlog 3. Uses GPS protocol.
Newlog P1	High accuracy, single channel pressure recorder with integral transducer. Uses GPS protocol.
Newlog P2	Low cost pressure recorder with integral transducer. Uses GPS protocol.
Newlog PF1	As P1 but with flow input. Uses GPS protocol.
Newlog PF2	As P2 but with flow input. Uses GPS protocol.
Newlog PS	Pump state recorder. Uses GPS protocol.
Newlog SX	High accuracy depth recorder using external transducer. Uses GPS protocol.
Newlog X	Variant of standard Newlog 3 with replaceable battery, see Newlog 3 for more information. Uses GPS protocol.
Newlog X2	Variant of standard Newlog 3 with replaceable battery, see Newlog 3 for more information. Uses GPS protocol.
Newlog FP	Pump state recorder with channel set to event recording. Uses GPS protocol.
Intelect	A version of the Antogas unit with integral pressure pilot.
IS Newlog	Intrinsically Safe version of Newlog 3. Uses GPS protocol.
Utilog	Combined 4-channel logger and modem. Uses GPS protocol.

